

**REMARKS**

A total of 34 claims remain in the present application. The foregoing amendments are presented in response to the Office Action mailed August 23, 2007, wherefore reconsideration is respectfully requested. By way of the foregoing amendments, independent claims 1, 12, 34, 43 and 45 have been amended to more clearly define features of the present invention, and in particular to define features of the initial access channel comprising a predetermined set of one or more time-continuous components of the OFDM signal, and further to define the content of the access information comprising a common synchronization code and a cell-specific synchronization code. Claims 3, 5, 7, 9, 14, 26, 28-29, 34, 37-39 and 44-46 have been amended to reflect the language of the revised independent claims 1, 12, 34, 43 and 45. Finally, claims 2, 4-5, 8, 11, 13, 31-32, 36, 40-42 and 47 have been cancelled without prejudice of disclaimer.

In preparing the above-noted amendments, careful attention was paid to ensure that no new subject matter has been introduced.

Referring now to the text of the Office Action:

- claims 1-6, 8-13 and 31-47 stand rejected under 35 U.S.C. § 102(e), as being unpatentable over the teaching of United States Patent Application Publication No. 2003/0081538 (Walton et al); and
- claim 7 stands rejected under 35 U.S.C. § 103(a), as being unpatentable over the teaching of Walton et al in view of United States Patent No. 7,039,001 (Krishnan et al.); and
- claims 14-30 have been objected to as depending from a rejected base claim, but would be allowable if rewritten in independent form and including all of the limitations of the base claim and any intervening claims.

As an initial matter, Applicant appreciates the Examiner's indication of allowable subject matter in claims 14-30. The foregoing rejections of claims 1-13 and 31-47 are believed

to be traversed by way of the above-noted claim amendments, and further in view of the following discussion.

Independent claims 1, 12, 34, 43 and 45 have been amended to define that access information modulated onto an initial access channel comprises a common synchronization code that is common to each of the plurality of base stations and a cell-specific synchronization code that is orthogonal to the common synchronization code and unique to each base station, and further to define that the access information is modulated to an initial access channel which comprises a predetermined set of one or more time-continuous signal components of the OFDM communications signal, each time-continuous signal component being carried by a respective sub-carrier. It is believed that none of the known prior references teach or fairly suggest these features

Independent claim 34 has been amended to define that the cell-specific synchronization code is modulated onto a scattered pilot channel. Again, it is believed that none of the known prior references teach or fairly suggest this feature.

United States Patent Application Publication No. 2003/0081538 (Walton et al) teaches a multiple-access OFDM-CDMA system. According to Walton, a base station transceiver includes a modulator 220 for processing user data for transmission. “the processing by modulator 220 includes (1) spreading the coded data for each user with a respective set of one or more spreading codes, (2) transforming the spread data, (3) scaling the transformed data for each user with a respective gain, (4) combining the scaled data for all users and other data for other channels (e.g., pilot, sync, and paging channels), and (5) covering the combined data with a cover code.” [para 29]. With reference to FIG. 3, Walton et al. teach that:

“For each time interval k, summer 332 receives and combines the scaled transmission symbols from all enabled multipliers 330 and other data for other overhead channels (e.g., pilot, broadcast, paging, sync, and power control channels) to provide combined data. For example, the scaled pilot is provided by a multiplier 330p and combined with the other data by summer 332. A multiplier 334 then receives and multiplies the combined data with a cover

code,  $p_j(n)$ , to provide modulated data,  $y(n,k)$ . Multiplier 334 effectively covers the combined data with the cover code assigned to the cell/sector.”

[para 53, FIG. 3]

“The cover code,  $p_j(n)$ , is unique to the  $j$ -th cell or sector serviced by the base station, and allows the terminals to identify the individual cells/sectors.” [para 54].

With specific reference to independent claims 1, 12, 34, 43 and 45, the person of ordinary skill in the art will recognise that Walton et al do not fairly teach or suggest the features of the present invention. In particular:

- Walton et al do not mention an initial access channel, and do not teach or suggest that access information is applied to this channel. Rather, Walton et al teach that the cover code is applied to the combined data (which includes both user data and the pilot), and so is modulated onto every component (sub-carrier) of OFDM symbol.
- Walton et al do not teach or fairly suggest that the cover code is composed to two orthogonal codes; a common synchronization code and a cell-specific synchronization code. As noted above, Walton et al do refer to embodiments in which the cover code is unique to cell or sector. However, Walton et al do not teach or suggest that this is combined with a second code (the common synchronization code) that is common to all of the cells/sectors of the network.

In light of the foregoing, it is respectfully submitted that Walton et al fails to teach or fairly suggest all of the limitations of the presently claimed invention. Reconsideration and withdrawal of the claim rejections under 35 U.S.C. § 102(e) are therefore believed to be in order.

As noted above, Walton et al fails to teach or fairly suggest all of the limitations of the presently claimed invention. None of the other known references provide the missing teaching.

United States Patent No. 7,039,001 (Krishnan et al.) teach “techniques to estimate the frequency response of a wireless channel in an OFDM system. In one method, an initial estimate of the frequency response of the wireless channel is obtained for a first group of subbands based on a pilot transmission received via the subbands in the first group. An estimate of the impulse response of the wireless channel is then derived based on the initial frequency response estimate. An enhanced estimate of the frequency response of the wireless channel is then derived for a second group of subbands based on the impulse response estimate. The first and second groups may each include all or only a subset of the usable subbands. Subband multiplexing may be used to allow simultaneous pilot transmissions by multiple terminals on their associated groups of subbands.” [Abstract] However, Krishnan et al. are silent with respect to a code composed of two orthogonal codes; a common synchronization code and a cell-specific synchronization code, which are modulated onto an initial access channel of the OFDM signal, as required by the present invention.

In light of the foregoing, it is respectfully submitted that Walton et al in view of Krishnan et al. fails to teach or fairly suggest all of the limitations of the presently claimed invention. Reconsideration and withdrawal of the claim rejections under 35 U.S.C. § 103(a) are therefore believed to be in order.

Thus it is further believed that the present application is in condition for allowance, and early action in that respect is courteously solicited.

Respectfully submitted,

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